



H. T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

**BIOLOGICAL RESOURCES REPORT FOR
TRI-CITIES LANDFILL REUSE PLAN**

Prepared by:

H.T. Harvey & Associates

Stephen C. Rottenborn, Ph.D., Principal
Patrick Boursier, Ph.D., Senior Botanist/Wetlands Ecologist
Julie Klingmann, M.S., Project Manager
Nellie Thorngate, M.S., Wildlife Biologist
Catherine Roy, M.S. Plant Ecologist

Prepared for:

City of Fremont
39550 Liberty Street
Fremont, CA 94538
Attention: Steve Kowalski
Associate Planner

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EXECUTIVE SUMMARY

Waste Management of Alameda County has proposed a Reuse Plan (Plan) to develop the Tri-Cities Resource Recovery Facility (TCRRF) on approximately 77.52 acres (hereafter “Plan Area”) of already developed and disturbed land within the Tri-Cities Recycling and Disposal Facility (TCRDF). The TCRDF is located in the City of Fremont in Alameda County, California. The Plan focuses on two areas within the TCRDF, Multi Use Zones 1 and 2, and will be implemented as the landfill operations cease and the landfill closure is implemented.

The majority of the Plan Area has limited plant species diversity due to the disturbed nature of most of the property. Four habitats/land use types occur within the Plan Area: disturbed seasonal wetland depression, aquatic (within the drainage ditches), ruderal, and developed. The landfill is immediately west of the Plan Area. Extensive natural wetlands occur outside the Plan Area along the southern edge of the site (characterized as muted tidal salt marsh) and to the northwest (characterized as pickleweed/cattail wetland).

Two individuals of the Hall’s bushmallow (*Malacothamnus hallii*), listed as a rare plant by the California Native Plant Society, were observed in Multi Use Zone 1 in a developed, actively used area. These individuals have naturalized here since the development of the TCRDF, and are unusual in that they do not occur in the described natural habitat or elevation range for the species. The removal of two Hall’s bushmallow plants is not expected to result in significant impacts to this species due to the absence of suitable habitat and associated native species on the Plan Area, which suggests that establishment of a viable bushmallow population here is unlikely to occur. Due to the extensive disturbance and lack of natural habitats, there are no other special-status plants expected to occur in the Plan Area.

The Plan Area and the immediate vicinity provides suitable foraging habitat for several special-status species of wildlife, including the white-tailed kite (*Elanus leucurus*), American peregrine falcon (*Falco peregrinus anatum*), golden eagle (*Aquila chrysaetos*), burrowing owl (*Athene cunicularia*), short-eared owl (*Asio flammeus*), yellow warbler (*Dendroica petechia*), and tricolored blackbird (*Agelaius tricolor*). The site provides suitable nesting and foraging habitat for small numbers of individuals of the northern harrier (*Circus cyaneus*), loggerhead shrike (*Lanius ludovicianus*), Bryant’s savannah sparrow (*Passerculus sandwichensis alaudinus*), Alameda song sparrow (*Melospiza melodia pusillula*), and San Francisco common yellowthroat (*Geothlypis trichas sinuosa*). However, impacts to habitat of these species will be less than significant. Plan implementation will not substantially reduce the habitat that is regionally available to these species or substantially restrict their range.

Plan implementation could result in significant direct impacts to individual salt marsh harvest mice (*Reithrodontomys raviventris raviventris*), salt marsh wandering shrews (*Sorex vagrans halicoetes*), California tiger salamanders (*Ambystoma californiense*), burrowing owls, San Francisco common yellowthroats, and Alameda song sparrows. Mitigation measures will reduce these potential impacts to less-than-significant levels.

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ENVIRONMENTAL SETTING

LANDFILL REUSE PLAN DESCRIPTION

Waste Management in Alameda County has proposed a new Reuse Plan (Plan) to develop the Tri-Cities Resource Recovery Facility (TCRRF) on approximately 77.5 acres (ac) (hereafter “Plan Area”) of already developed and disturbed land within the 378-acre Tri-Cities Recycling and Disposal Facility (TCRDF). The TCRDF is located in the City of Fremont in Alameda County, California (Figure 1). The Plan focuses on two areas within the TCRDF, Multi Use Zones 1 and 2 (Figure 2), and will be implemented as landfill operations at the TCRDF cease and the landfill closure is implemented. The landfill is slated to reach capacity in 2011 or 2012 and is anticipated to be capped by 2015. Assessment of impacts to biological and regulated resources of the landfill closure was conducted in 2006 (H. T. Harvey & Associates 2006).

The Plan includes new and existing uses that will be located in Multi Use Zones 1 and 2 shown in Figure 2. The proposed new activities include the following uses:

- biomedical waste acceptance, treatment, transfer, and recycling facility.
- top soil blends, and planting mix processing, blending, and sales.
- retail landscape products sales center.

In addition to these new uses, the TCRRF will include the following continued uses:

- concrete/asphalt acceptance and recycling operation.
- mulch and landscape products processing, blending, and sales.
- maintenance facility to support concrete recycling, energy production, and landscape products processing operations.
- landfill closure and post-closure monitoring and maintenance activities.
- landfill gas collection, conveyance, and destruction at a flare and/or electrical generation facility.

PLAN AREA DESCRIPTION

The TCRDF is located at the western end of Auto Mall Parkway, west of Interstate-880, at 7010 Auto Mall Parkway. It occurs on the U.S. Geological Survey (USGS) Milpitas 7.5 minute Quadrangle (1973). The TCRDF is bounded by the Union Pacific Railroad (UPRR) to the northeast, salt evaporators to the west and south, and an unnamed channel (which flows to Mowry Slough off-site) to the north.

Multi Use Zones 1 and 2 are located in the western central portion of the TCRDF (Figure 2). The surrounding land uses include the UPRR with an intervening drainage ditch to the northeast, an approximately 115-acre active waste disposal operation (i.e., the landfill) to the west, semi-

natural habitat areas to the northwest and southwest, and a previously disturbed but currently fallow area to the southeast. The Plan Area is situated at an elevation of approximately 0-6 feet (ft) mean sea level. The average annual precipitation of the site is 16 inches, and the average annual temperature is 57 degrees Fahrenheit.

The National Wetland Inventory (NWI) depicts three wetland types on or adjacent to the Plan Area: 1), palustrine emergent, seasonally flooded, diked; 2), palustrine, emergent, temporarily flooded, diked; and 3), palustrine, unconsolidated shore, seasonally flooded, diked (NWI 2011).

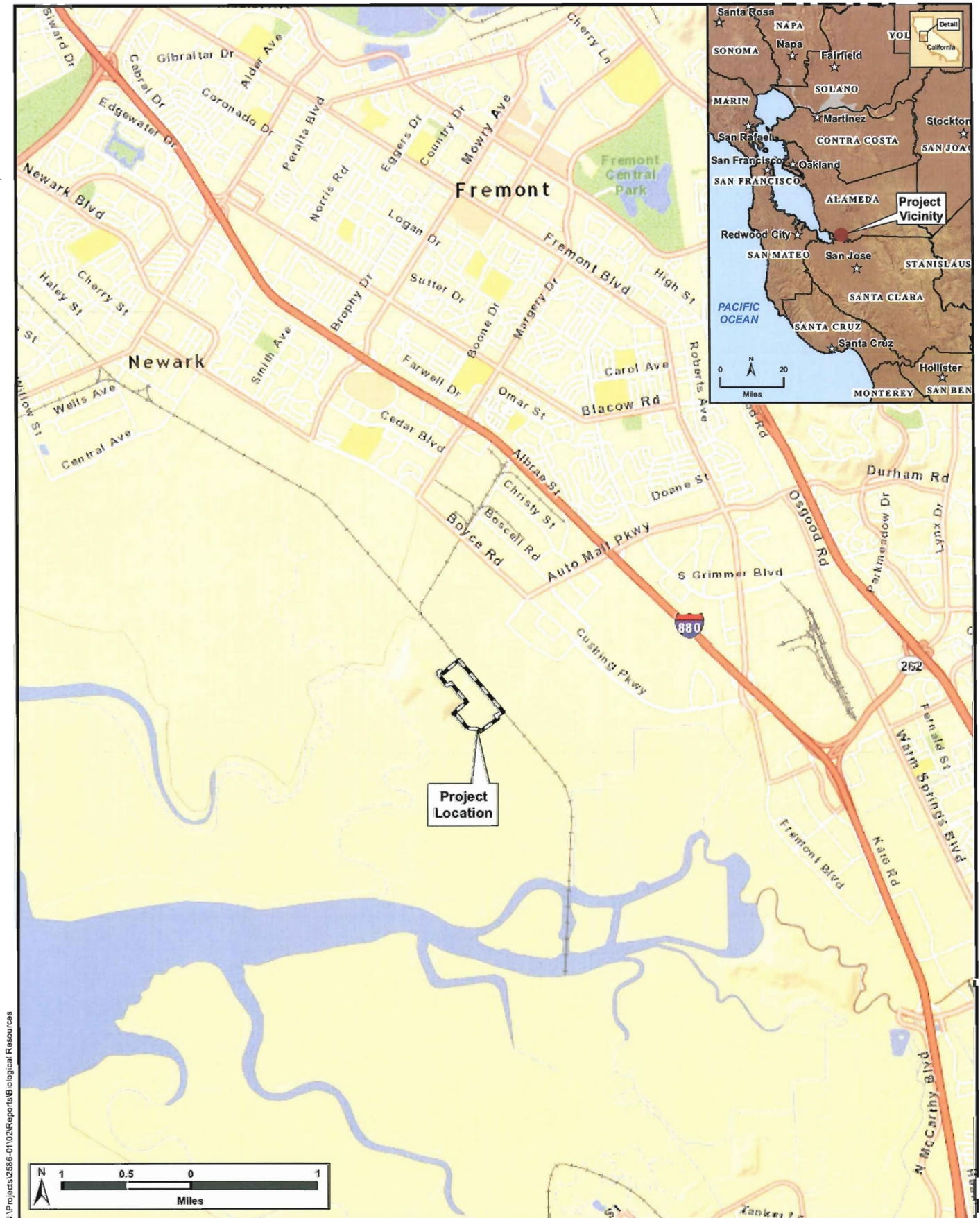
Soils from three series underlay the site: (1), Willows clay, drained; (2), Pescadero clay, drained; and (3), Reyes Clay drained (SCS 1975). The Willows clay underlays the majority of the Plan Area, and occurs on basin rims formed in alluvium derived from sedimentary rock; the water table is between 5 and 6 ft and flooding occurs less than once every 2 years. Included in the Willows clay are areas of Omni silty clay loam, which is known to have excess salts at the soil surface. The Pescadero clay covers a small portion of the site, and occurs on basin rims formed in alluvium derived from sedimentary rock; the water table has been lowered to 5 ft and flooding does not occur. The Reyes clay is mapped only in the muted-tidal salt marsh along the southern edge of the site. This soil occurs on tidal flats formed in alluvium derived from mixed sources; the water table is at 4 ft and flooding occurs more than once every 2 years, but for periods less than 2 days. A summary of the soil types historically present on the Plan Area is provided in Table 1 below.

The majority of the Plan Area has been extensively manipulated and contains fill material from unknown sources. Material from the southeastern portion of the site has been removed to cap portions of the landfill as needed, and added repeatedly over time. This area, located within the Plan Area boundaries, has undergone frequent and extensive disturbance due to the addition, translocation, and removal of fill and other materials. Most roads and developed areas contain compacted gravel. For these reasons, the majority of the site is assumed to contain non-native soils.

Table 1. Summary of Soil Types Present on the Tri-Cities Landfill Reuse Plan Area.

Soil Type	Drainage Class	Permeability	Soil pH
Pescadero Clay, Drained	Poorly drained	Very slow	Slightly acid
Reyes Clay, Drained	Very poorly drained	Very slow	Strongly acid
Willows Clay, Drained	Poorly drained	Very slow	Moderately alkaline

SCS Alameda County, Western Part 1975



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Figure 1: Vicinity Map
Tri-Cities Landfill Reuse Plan (2586-02)
July 2011



Figure 2: Multi Use Zones
 Tri-Cities Landfill Reuse Plan (2586-02)
 July 2011

BIOTIC SURVEYS

Field surveys of the entire 378-acre TCRDF, including the current Plan Area, were conducted by biologists from H.T. Harvey & Associates in 2006 as part of the preparation of the 2006 Landfill Closure Environmental Impact Report (H.T. Harvey & Associates 2006). Additional reconnaissance-level surveys were conducted within the Plan Area on 25 May 2011 by wildlife ecologist Nellie Thorngate, M.S., and plant ecologist Catherine Roy, M.S., to assess any changes in environmental conditions and potential for special-status species occurrences on the Plan Area in comparison to the detailed assessment we conducted in 2006. The purpose of these surveys was to document biotic resources associated with the site that may be impacted by Reuse Plan activities. Specifically, surveys were conducted to: 1) describe existing biotic habitats and wildlife communities; 2) assess the site for the potential to support special-status species and their habitats; 3) map existing habitats; and 4) conduct focused surveys for special-status plants. N. Thorngate returned to the site on 16 June and 18 July to verify site conditions in certain portions of the Plan Area.

BIOTIC HABITATS/LAND USE TYPES

There are four habitats/land use types in the Plan Area: developed, ruderal, disturbed seasonal wetland depression, and drainage ditches (aquatic) (Table 2, Figure 3). These biotic habitats and associated vegetation and wildlife are described in further detail below. Plant communities were described in terms of dominant tree, shrub, and herbaceous vegetation composition and, when possible, classified according to the nomenclature of Holland (1986), and Sawyer and Keeler-Wolf (1995). Figure 3 shows the distribution of these habitats and land use types.

Table 2. Summary of Biotic Habitats and Land Use Types Present on the Tri-Cities Landfill Reuse Plan Area.

Habitat Type	Acreage (ac)	Percent of Total (%)
Developed	61.95	79.91
Ruderal	11.31	14.59
Seasonal Wetland Depression	3.48	4.61
Drainage Ditches (aquatic)	0.78	0.89
Totals	77.52	100.00

The habitats surrounding the Plan Area include: pickleweed/cattail wetland to the northwest, landfill/ruderal to the west, muted tidal salt marsh to the south, ruderal with seasonal wetland depressions to the east (not recently disturbed), and aquatic in the drainage ditch to the east (see Figure 3). Because these habitats are not present in the Plan Area itself, they are not described in detail below.

Developed

Vegetation. The developed land use category includes structures, bare ground, hardscape, compacted gravel, stockpiled waste disposal and recycling equipment, and piles of recyclable materials, occupying approximately 61.95 ac of the Plan Area. The majority of the developed areas occur within locations that are in active use: the maintenance and operations area, landfill

gas flare facility, concrete/asphalt storage and recycling areas, wood waste/mulch receiving and processing area, and sanitary pump station. The developed areas are landscaped with eucalyptus (*Eucalyptus* sp.) and alder (*Alnus* sp.) trees, which are the only trees in the Plan Area; many of these trees appear to be of ordinance size (see *Regulated Habitats* section). A large area of compacted fill hardscape is being used to store and process a variety of raw fill material (not refuse) and recyclable building materials (e.g., asphalt, concrete, wood). This area is leveled and sprayed with water on a continual basis, and is devoid of vegetation.

Small patches of ruderal grassland vegetation that are too small to map are present in developed areas that are not continuously impacted or maintained. Vegetation in these isolated patches is similar to what was described as occurring in ruderal habitat, being primarily composed of non-native species such as ripgut brome (*Bromus diandrus*), wild radish (*Raphanus sativus*), and sweet fennel (*Foeniculum vulgare*).

Wildlife. Few wildlife species can tolerate the intensive disturbance that occurs within the developed areas on the Plan Area. A few bird species are likely to nest in and around the structures on the site; these include house finches (*Carpodacus mexicanus*), mourning doves (*Zenaidura macroura*), barn swallows (*Hirundo rustica*), cliff swallows (*Petrochelidon pyrrhonota*), and black phoebes (*Sayornis nigricans*), as well as non-native European starlings (*Sturnus vulgaris*), rock pigeons (*Columba livia*), and house sparrows (*Passer domesticus*). Western fence lizards (*Sceloporus occidentalis*) occur in the developed portions of the site, as do mammals such as black-tailed hares (*Lepus californicus*), feral cats (*Felis catus*), and introduced Norway rats (*Rattus norvegicus*). Other species that commonly occur within developed habitats include house mice (*Mus musculus*), Virginia opossums (*Didelphis virginiana*), and striped skunks (*Mephitis mephitis*). Loggerhead shrikes (*Lanius ludovicianus*) may nest in the smaller trees and large shrubs.

Ruderal

Vegetation. Ruderal habitat occupies approximately 11.31 ac of the Plan Area. The majority of this habitat occurs along the periphery of the Plan Area between differing use areas (e.g., storage and recycling) or where drainage ditches inhibit use. The largest area is along the periphery of the borrow, staging, and stockpiling area within Multi Use Zone 2 (Figures 2 and 3). The extent of this habitat type likely changes as areas of active disturbance change. Plant species present vary with topography, disturbance, and flooding-tolerance. This habitat is dominated by 1-3 ft non-native, annual grass species such as Italian ryegrass (*Lolium multiflorum*), wild oats (*Avena fatua*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), ripgut brome, saltgrass (*Distichlis spicata*), and foxtail barley (*Hordeum jubatum*). Additional herbaceous species include aggressive non-natives such as black mustard (*Brassica nigra*), field mustard (*Brassica rapa*), purple vetch (*Vicia benghalensis*), curly dock (*Rumex crispus*), wild radish, bull thistle (*Cirsium vulgare*), and charlock (*Synapsis arvensis*).

Wildlife. The patches of ruderal habitat intermingled with the developed areas of the site provide limited wildlife habitat due to periodic disturbance. However, the tall, dense ruderal vegetation along the southeastern periphery is contiguous with the ruderal/seasonal wetland depression habitat outside the Plan Area. This habitat shelters nesting song sparrows (*Melospiza*



Figure 3: Biotic Habitats Map
Tri-Cities Landfill Reuse Plan (2586-02)
July 2011

melodia; possibly including the Alameda song sparrow [*M. m. pusillula*], San Francisco common yellowthroats (*Geothlypis trichas sinuosa*), and red-winged blackbirds (*Agelaius phoeniceus*); several male red-winged blackbirds, common yellowthroats, and song sparrows were observed singing on territories in this habitat, and the contiguous habitat off-site, during the wildlife survey, suggesting active nesting in the area. Ducks may nest in small numbers as well, particularly where the ruderal habitat meets the seasonal wetland habitat. Red-tailed hawks (*Buteo jamaicensis*) and northern harriers (*Circus cyaneus*) were observed foraging over this area for prey species such as California voles (*Microtus californicus*). A variety of raptors, finches, and sparrows will forage and collect nesting material in this habitat. Mammals, or evidence of mammals, such as black-tailed hares, California ground squirrels (*Spermophilus beecheyi*), Botta's pocket gophers (*Thomomys bottae*), and feral cats were observed in the vegetated ruderal habitats on the site.

Disturbed Seasonal Wetland Depression

Vegetation. Disturbed seasonal wetlands are found in two topographically-depressed areas on the site. The first location is situated adjacent to a drainage ditch located on UPRR property along the northwest boundary of the Plan Area (Figure 3). Winter rains collect within the drainage ditch, allowing wetland plants to establish on site. The second area is located along the southern portion of the site (Figure 3). This portion of the Plan Area is separated from the adjacent muted tidal salt marsh by a narrow berm (covered with ruderal habitat). The topographic depression collects surface runoff allowing water to pond along the earthen berm. This area undergoes intensive disturbance, with fill and other materials having been placed, moved around, and removed repeatedly as a part of the facility's resource recovery operations. This seasonal wetland depression had not been disturbed for some period prior to the reconnaissance survey on 25 May 2011; however, the seasonal wetland depression had been disturbed prior to a return visit on 18 July 2011.

The two seasonal wetland depressions comprise 3.48 ac of the Plan Area. Hydrophytes that appear in these depressions include brass buttons (*Cotula coronopifolia*), patches of pickleweed, and rabbitsfoot grass. Ruderal species such as black mustard and wild oats invade these depressions in slightly elevated islands within the microtopography.

Wildlife. During wet months, impounded waters of this seasonal wetland collect adjacent to the larger muted tidal salt marsh (Figure 3), and therefore, this area provides seasonal foraging habitat to several wildlife species associated with the salt marshes. Shorebirds such as greater yellowlegs (*Tringa melanoleuca*), least sandpipers (*Calidris minutilla*), western sandpipers (*C. mauri*), and long-billed dowitchers (*Limnodromus scolopaceus*) may forage in these ponded areas during migration, while a few pairs of species such as the American avocet (*Recurvirostra americana*), black-necked stilt (*Himantopus mexicanus*), mallard (*Anas platyrhynchos*), gadwall (*Anas strepera*), cinnamon teal (*Anas cyanoptera*), and Canada goose (*Branta canadensis*) may nest in and around these wetlands if disturbance is not too great. Because of the lack of recent disturbance in these areas and the proximity of the tidal marsh during our 25 May 2011 visit, this depression was bordered by robust patches of pickleweed; the pickleweed and adjacent ruderal habitat could potentially serve as foraging habitat for salt marsh harvest mice and salt marsh wandering shrews from the adjacent salt marsh. No amphibians are expected to occur in these waters or within this habitat area because of the saline conditions.

Drainage Ditches

Vegetation. Drainage ditches were identified within and adjacent to developed portions of the Plan Area. Such areas are frequently closely associated with ruderal habitat areas. These areas are mainly located around the edges of the Multi Use Zones (see Figure 2) and appear to be functioning as onsite stormwater drainage ditches. The vegetation in these drainages indicates variations in soil saturation and salinity. For example, drier areas are vegetated with species that are associated with uplands as well as wetlands such as Italian ryegrass, and Harding grass (*Phalaris aquatica*), and wetter areas are vegetated with freshwater hydrophytes such as cattails, and sedges (*Carex* sp.). One of these ditches on the northeastern end of the improvement area, near a water tank, was holding water at the time of the May 2011 site visit and was dominated by cattails. A linear drainage along the eastern boundary of the property identified in 2006 as supporting upland species was ponding and currently (2011) supports wetland species such as cattails, sedges, rabbitsfoot grass, and brass buttons. Changes in hydrology both onsite and offsite appear to be the cause of increased saturation within the drainage ditches observed in 2011.

Wildlife. Due to the small size of these drainage ditches and their continued disturbance by activities in the Multi Use Zones, few waterbirds are expected to occur in this habitat. Nevertheless, shorebirds such as the killdeer (*Charadrius vociferus*), greater yellowlegs, and black-necked stilt, and ducks such as the mallard and gadwall, may forage in these ditches occasionally.

SPECIAL-STATUS SPECIES AND SENSITIVE HABITATS

Special-status Plant Species

Prior to site surveys, information concerning the known distribution of threatened, endangered, or other special-status plant species with potential to occur in the area was collected from several sources and reviewed. The sources included the California Department of Fish and Game's (CDFG's) Natural Diversity Database (CNDDDB 2011) and information available through the U.S. Fish and Wildlife Service (USFWS), CDFG, and technical publications. The California Native Plant Society's (CNPS's) *Inventory of Rare and Endangered Vascular Plants of California* (2011) and *The Jepson Manual* (Hickman 1993) supplied information regarding the distribution and habitats of vascular plants in the vicinity.

A query of special-status plants in the CNDDDB was first performed for the USGS Milpitas topographical quadrangle in which the Plan Area occurs, as well as the eight quadrangles surrounding the Plan Area. The CNPS Inventory was then queried to produce a similar list for Alameda County. The specific habitats included in the query were valley and foothill grassland and marshes and swamps. These habitats were selected based on the similarity of their constituent species to those occurring on the Plan Area. The habitat requirements of each special-status plant species were the principal criteria used for inclusion in the list of species potentially occurring on the site.

Many of the special-status plant species that occur in Alameda County are associated with habitat or soil types that did not occur on the Plan Area historically, or no longer occur on the site due to the extensive removal of soil and addition of fill material; such habitats and soil types that are absent include serpentine soils, strongly alkaline soils, clay soils, vernal pool habitat, and cismontane woodland habitat. Additionally, many of the species identified as potentially occurring in the area occur at much higher elevations than are present at the site. This is particularly true considering that the only native habitat remaining on the site is at approximately sea level. Sixty species associated with valley and foothill grassland or marsh and swamp habitats were analyzed for rarity, none of which were identified as potentially occurring in the site. The CNDDDB (2011) records list 10 species as occurring within 2 miles (mi) of the Plan Area: San Joaquin spearscale (*Atriplex joaquiniana*), Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), Contra Costa goldfields (*Lasthenia conjugens*), alkali milk-vetch (*Astragalus tener* var. *tener*), prostrate navarretia (*Navarretia prostrata*), Hoover's button-celery (*Eryngium aristulatum* var. *hooveri*), California seablight (*Suaeda californica*), Hall's bushmallow (*Malacothamnus hallii*), slender leaved pondweed (*Potamogeton filiformis*) and Point Reyes bird's-beak (*Cordylanthus maritimus* ssp. *palustris*) (Figure 4). Seven of these special-status species were rejected from consideration due to the degraded nature of habitat on the site, the lack of associated native species, and/or the absence of specific microhabitat variables such as soil type, elevation, or hydrology (Appendix A). It was determined that only two species, Contra Costa goldfields and Congdon's tarplant, could potentially occur on the site in its present condition. In addition, an unusual occurrence of Hall's bushmallow was identified during the reconnaissance survey in habitat outside of the known range for the species. Therefore, a discussion of these three species is provided below.

Contra Costa Goldfields (*Lasthenia conjugens*). Federal Listing Status: Endangered; State Listing Status: None; CNPS List 1B.1. This annual herb occurs in mesic (moderate moisture regime) valley and foothill grasslands and vernal pools. The blooming period is from March to June. The range of this species includes Alameda and six other counties. The CNDDDB (2011) reports several occurrences within several miles of the Plan Area. These include: (1) Don Edwards National Wildlife Refuge, 0.1 to 0.6 miles west of Cushing Avenue in Fremont. (2) Sky Sailing Airport, 0.4 miles west of Interstate 880, approximately 0.6 miles northwest of Cushing Road and Dixon Landing Road, Fremont, and; (3) approximately 0.25 miles north of the west end of Depot Road, Alameda County.

Due to the proximity of these populations, and the presence of potentially suitable habitat on site, surveys were performed for this species on 18 May 2006 for the Biological Resources Report for the Tri-Cities Recycling and Disposal Facility Closure EIR in 2006 (H. T. Harvey & Associates 2006). However, Contra Costa goldfields was not detected anywhere on the site. In addition, the Plan Area was surveyed during reconnaissance surveys on 25 May 2011, within the bloom period, and the species was not detected and is thus considered absent from the impact areas.

Congdon's Tarplant (*Centromadia parryi* ssp. *congdonii*). Federal Listing Status: None; State Listing Status: None; CNPS List 1B.2. This annual herb occurs in valley and foothill grassland, particularly those with alkaline substrates, and in sumps or disturbed areas where water collects. The blooming period extends from June through November. The range of this

Table 3. Special-status Species, Their Status, and Potential Occurrence in the Tri-Cities Landfill Reuse Plan Area.			
NAME	*STATUS	HABITAT	POTENTIAL FOR OCCURRENCE ON SITE
Federal or State Endangered and Threatened Species			
Contra Costa Goldfields (<i>Lasthenia conjugens</i>)	FE, CNPS 1B.1	Vernal pools and mesic areas in valley and foothill grassland habitat.	Seasonal wetlands in the Plan Area offer potentially suitable habitat and the CNDDDB contains reports of this species in the immediate vicinity. Blooming-season surveys conducted during an 18 May 2006 survey and a reconnaissance-level survey on 25 May 2011 did not find any populations within the Plan Area. No further surveys are warranted. Determined to be absent.
Vernal Pool Tadpole Shrimp (<i>Lepidurus packardii</i>)	FE	Vernal pools and swales containing clear to highly turbid water.	Recent records are known from areas northeast of the site (on the other side of the railroad tracks). No suitable habitat in the Plan Area; the seasonal depressions are created by ongoing disturbance, and no stable pools are present. Likely absent from the site.
California Red-legged Frog (<i>Rana draytonii</i>)	FT, SP, CSSC	Streams, freshwater pools and ponds with overhanging vegetation	No suitable habitat on-site; aquatic and wetland habitat on site too saline. No hydrological connection to known populations. Nearest record more than 5 mi to the east. Determined to be absent.
California Tiger Salamander (<i>Ambystoma californiense</i>)	FT, ST	Vernal or temporary pools in annual grasslands, or open stages of woodlands.	Occasional dispersants may cross the tracks and occur on the site. However, given the extent and intensity of ongoing disturbance in Multi Zone 2, the site does not provide high-quality dispersal or aestivation habitat, and the seasonal depressions are likely too saline, and are disturbed too frequently, to provide suitable breeding habitat. Unlikely to breed on the site.
Western Snowy Plover (<i>Charadrius alexandrinus nivosus</i>)	FT, CSSC	Sandy beaches on marine and estuarine shores.	No suitable habitat on-site. Marginal foraging habitat is present on flats in the adjacent muted-tidal salt marsh but unlikely to occur in Plan Area or in close proximity due to ongoing disturbance in Plan Area. Determined to be absent.
California Clapper Rail (<i>Rallus longirostris obsoletus</i>)	FE, SE	Tidal salt marsh dominated by cordgrass and pickleweed; occasionally occurs in brackish marshes.	No suitable habitat on site due to lack of cordgrass, short stature of pickleweed, lack of tidal channels and ongoing disturbance in Plan Area. Determined to be absent.

Table 3. Special-status Species, Their Status, and Potential Occurrence in the Tri-Cities Landfill Reuse Plan Area.			
NAME	*STATUS	HABITAT	POTENTIAL FOR OCCURRENCE ON SITE
Salt Marsh Harvest Mouse (<i>Reithrodontomys raviventris</i>)	FE, SE	Pickleweed in saline emergent wetlands.	Pickleweed-dominated habitat in muted-tidal salt marsh and pickleweed/cattail wetland adjacent to the Plan Area provides high-quality habitat, and the intervening berm is covered with ruderal habitat that may be used for foraging. Disturbed seasonal wetland depression near berm may also be used for foraging occasionally when it has not been recently disturbed and is thus vegetated. May be present.
California species of special concern			
Western Pond Turtle (<i>Actinemys marmorata</i>)	CSSC	Permanent or nearly permanent water in a variety of habitats.	No suitable habitat on site; determined to be absent.
Northern Harrier (<i>Circus cyaneus</i>)	CSSC (Nesting)	Nests in extensive grassland or tall wetland vegetation, forages in a variety of open habitats.	Forages on site; taller vegetation in the ruderal habitat in adjacent contiguous habitat (south of the Plan site) could potentially support a single breeding pair in close proximity to the Plan Area.
Burrowing Owl (<i>Athene cunicularia</i>)	CSSC	Nests and roosts in burrows, usually of ground squirrels, in grasslands and ruderal habitats.	Known to occur in the site vicinity. Ground squirrels in surrounding habitats provide potential burrows. Burrowing owls may forage on the site and possibly breed in close proximity to the Plan Area (e.g., on the landfill in areas not regularly disturbed) where they could be impacted by Plan activities.
Short-eared Owl (<i>Astio flammeus</i>)	CSSC (Nesting)	Requires tall emergent vegetation or grasses for mating.	Possibly a rare forager during the non-breeding season, but not expected to breed on the site. Absent as a breeder.
Loggerhead Shrike (<i>Lanius ludovicianus</i>)	CSSC (Nesting)	Nests in tall shrubs and dense trees, forages in grasslands, marshes, and ruderal habitats.	Likely forages on the site. Trees and shrubs provide potential breeding sites. Potentially present as a breeder.
San Francisco Common Yellowthroat (<i>Geothlypis trichas sinuosa</i>)	CSSC (Nesting)	Breeds in fresh and salt marshes around South San Francisco Bay where there is thick foraging cover; breeds in tall grass, tules, willows.	Observed in taller vegetation within the Plan Area and contiguous ruderal habitat. Likely breeds in these areas.
Alameda Song Sparrow (<i>Melospiza melodia pusillula</i>)	CSSC	Breeds and forages primarily in salt marsh habitats in the South San Francisco Bay.	Song sparrows observed in taller vegetation within the Plan Area and contiguous ruderal habitat. Whether these birds are of the race <i>pusillula</i> or the more widespread race <i>gouldii</i> is unknown, but <i>pusillula</i> is likely represented on TCRDF; may be present within Plan Area.

Table 3. Special-status Species, Their Status, and Potential Occurrence in the Tri-Cities Landfill Reuse Plan Area.			
NAME	*STATUS	HABITAT	POTENTIAL FOR OCCURRENCE ON SITE
Bryant's Savannah Sparrow (<i>Melospiza melodia pusillula</i>)	CSSC	Breeds and forages primarily in coastal tidal marsh and grassland habitats, and in adjacent ruderal habitats, in the South San Francisco Bay; also found in upland grasslands within the fog belt. Winters in grasslands throughout central California.	Bryant's savannah sparrows have been documented breeding in the muted tidal marshes adjacent to the Plan Area, and could potentially breed within the Plan Area in grassy ruderal habitats in very low numbers, where these areas remain undisturbed for sufficient periods of time.
Yellow Warbler (<i>Dendroica petechia brewsteri</i>)	CSSC (Nesting)	Nests in dense stands of willow and other riparian habitat.	Yellow Warblers (subspecies not determined) occur on-site during migration, Does not breed on the site; no suitable breeding habitat.
Tricolored Blackbird (<i>Agelaius tricolor</i>)	CSSC	Breeds near fresh water in dense emergent vegetation.	May forage on site, but stands of herbaceous and emergent vegetation are not large enough to support nesting by this species. Not expected to breed on site.
Salt Marsh Wandering Shrew (<i>Sorex vagrans halicoetes</i>)	CSSC	Pickleweed-dominated salt marsh.	Distribution poorly known, but may occur in seasonal wetland depressions near muted-tidal salt marsh if the wetland has not been recently disturbed (and is thus vegetated); may occur in these portions of the site. May be present.
Pallid Bat (<i>Antrozous pallidus</i>)	CSSC	Forages over many habitats; roosts in buildings, rocky outcrops and rocky crevices in mines and caves.	Unlikely forager; no roosting habitat on site. Determined to be absent.
State Protected Species or CNPS Species			
Congdon's Tarplant (<i>Centromadia parryi</i> ssp. <i>congonii</i>)	CNPS 1B.2	Valley and foothill grassland often in clay soils.	Ruderal areas within Plan Area offer suitable habitat and the CNRDB contains historic reports of this species occurring in the Fremont area. Surveys conducted on 20 June 2006 did not detect the species, and a reconnaissance-level survey on 25 May 2011 did not find any populations within the Plan Area. No further surveys are warranted. Considered absent.
Hall's Bushmallow (<i>Malacothamnus hallii</i>)	CNPS 1B.2	Chaparral and coastal scrub	Hall's bushmallow is present near a drainage ditch within the developed habitat. This unusual occurrence is not in the natural habitat or elevation range described for the species. While the mechanism of introduction is unknown, the 1987 aerial photographs indicate that the two shrubs were not present at that time and most likely have become naturalized on the site since the development of the TCRDF. Not considered a natural occurrence.

Table 3. Special-status Species, Their Status, and Potential Occurrence in the Tri-Cities Landfill Reuse Plan Area.			
NAME	*STATUS	HABITAT	POTENTIAL FOR OCCURRENCE ON SITE
White-tailed Kite (<i>Elanus leucurus</i>)	SP	Forages in open areas of many habitats.	Forages on site, but not expected to nest due to small size of, and frequent disturbance near, the few trees on site.
Golden Eagle (<i>Aquila chrysaetos</i>)	SP	Forages in open grasslands; nests in tall trees or other tall structures.	May fly over or forage on the site on occasion, but is not expected to nest on the site due to lack of sufficiently tall trees and extensive urbanization surrounding the site.
Peregrine Falcon (<i>Falco peregrinus anatum</i>)	SP	Forages in many habitats; nests on cliffs, or, in urban areas, tall bridges or buildings.	May forage in the vicinity of the Plan Area, but no suitable nesting habitat on-site.

***LISTING STATUS**

FE = Federally listed Endangered
 FT = Federally listed Threatened
 SE = State listed Endangered
 ST = State listed Threatened
 CSSC = California species of special concern
 SP = State Protected Species
 CNPS IB = Plants considered by CNPS to be rare, threatened, or endangered in California, and elsewhere

species has been reduced to Alameda, Contra Costa, Monterey, Santa Clara, San Luis Obispo, San Mateo, and is considered extirpated from San Mateo and Solano counties. The CNDDDB (2011) reports several occurrences of Congdon's tarplant within a 5 mile radius of the Plan Area. These are located: (1) within the Warm Springs District, west of Interstate 880 at Cushing Parkway in Fremont; (2) south of the Irvington District near the junction of Fremont Boulevard and Auto Mall Parkway in Fremont; (3) in Alviso north of Highway 237 and east of North 1st Street west of Milpitas in a field bounded by Grand Avenue, Wilson Way, Nortech Parkway, and Disk Drive; (4) along the railroad tracks west of Willow Road between Thornton Avenue and Wells Avenue in Newark, and; (5) Albrae, approximately 1 mile southwest of Fremont Raceways, west of Fremont. Suitable habitat is present on the site, primarily within the disturbed seasonal wetland depression habitat, but focused surveys performed on 20 June 2006 for the Biological Resources Report for the Tri-cities Recycling and Disposal Facility Closure EIR in 2006 (H. T. Harvey & Associates 2006) throughout the TCRDF detected only the common tarplant. In addition, the Plan Area was surveyed during reconnaissance surveys on 25 May 2011. Although this is not within the blooming period, the plants would have been recognizable and were not found. Therefore, this species is considered absent from the impact areas.

Hall's bushmallow (*Malacothamnus hallii*). **Federal Listing Status: None; State Listing Status: None; CNPS List 1B.2.** As mentioned above, an occurrence of what has been identified as Hall's bushmallow (*Malacothamnus hallii*) was found in the Plan Area, outside of the known elevation range or preferred habitat for the species. This occurrence is located above the bank of a drainage ditch near the water tank, within the area of the proposed improvements. Hall's bushmallow is listed by the CNPS as 1B.2; which means that it is considered rare, threatened, or endangered in California or elsewhere. There are 36 extant CNDDDB (2011) records of Hall's bushmallow throughout the state of California, the majority of which occur in coastal scrub or chaparral habitats at elevations between 30 and 2500 ft. The species is known from Contra Costa, Lake, Mendocino, Merced, Santa Clara, San Mateo, and Stanislaus counties (CNPS 2011). The occurrence on-site is not in or near either of the known habitats and occurs near sea level, below the described elevation for the species. However, there is a single CNDDDB (2011) occurrence of Hall's bushmallow approximately 5 mi south of the TCRDF in disturbed salt marsh habitat, which is the only occurrence at low elevation in disturbed, pickleweed salt marsh habitat. While the mechanism of introduction for the unusual occurrence on the site is unknown, a review of 1987 aerial photographs of the site reveal that the area where the shrubs are currently growing was leveled at that time and entirely devoid of vegetation, indicating that the two shrubs have become established since development of the TCRDF.

SPECIAL-STATUS WILDLIFE SPECIES

Prior to the site surveys, information concerning the known distribution of threatened, endangered, or other special-status wildlife species with potential to occur in the area was collected from several sources and reviewed. The sources included the CDFG's Natural Diversity Database (CNDDDB 2011) and information available through the USFWS, CDFG, Museum of Vertebrate Zoology, and California Academy of Sciences.

The CNDDDB was queried for occurrences of special-status wildlife species within the USGS Milpitas topographical quadrangle in which the Plan Area occurs and the eight quadrangles (Figure 5). The specific habitat requirements and the locations of known occurrences of each

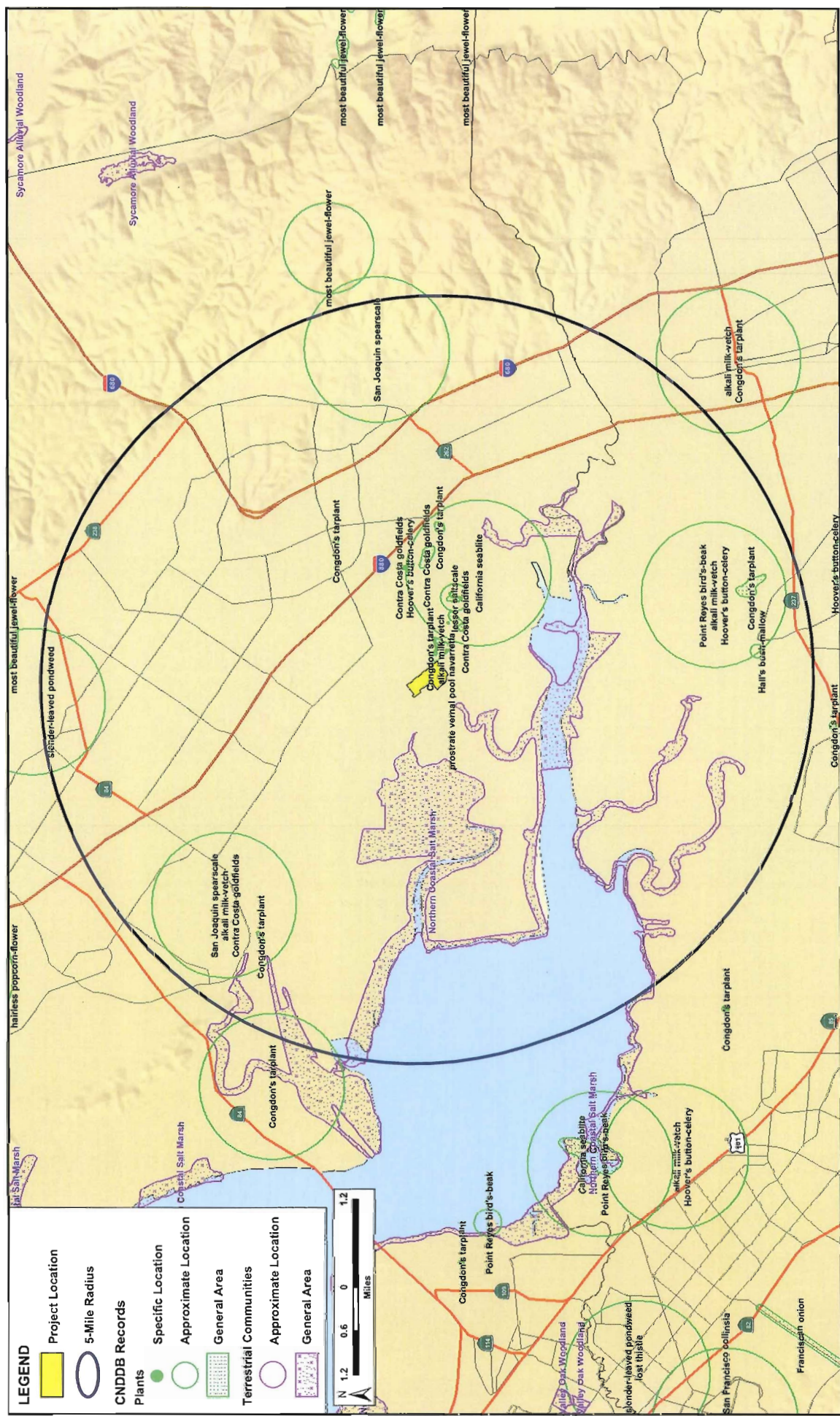


Figure 4: CNDDB Plants Records
Tri-Cities Landfill Reuse Plan (2586-02)
July 2011

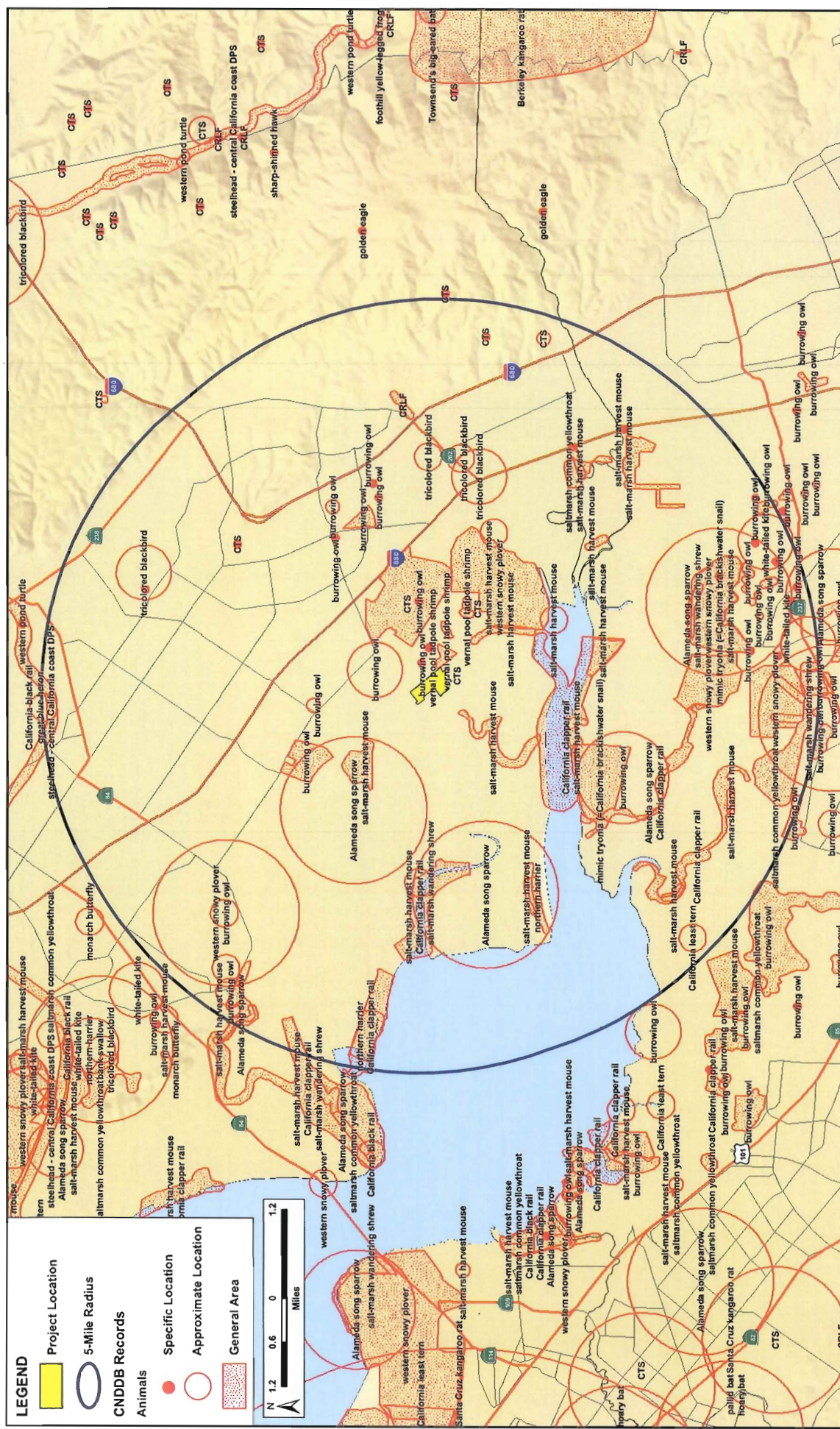


Figure 5: CNDDDB Animals Records
Tri-Cities Landfill Reuse Plan (2586-02)
July 2011

special-status wildlife species were the principal criteria used for inclusion in the list of species potentially occurring on the site (Table 3). Reconnaissance-level surveys were conducted in the Plan Area on 25 May 2011 for habitats capable of supporting special-status wildlife species.

The Plan is outside the known range of, or lacks suitable habitat for, several special-status species that occur elsewhere in the Fremont area. These species include the California red-legged frog (*Rana aurora draytonii*), western pond turtle (*Actinemys marmorata*), western snowy plover (*Charadrius alexandrinus nivosus*), California clapper rail (*Rallus longirostris obsoletus*), and pallid bat (*Antrozous pallidus*). Other special-status species may occur in the Plan Area only as uncommon to rare visitors, migrants, or transients, or may forage on the site in low numbers while breeding in adjacent areas. However, these species are not expected to breed on the site, or to be substantially affected by the proposed Plan. These species include the white-tailed kite (*Elanus leucurus*), American peregrine falcon (*Falco peregrinus anatum*), golden eagle (*Aquila chrysaetos*), short-eared owl (*Asio flammeus*), yellow warbler (*Dendroica petechia brewsteri*), and tricolored blackbird (*Agelaius tricolor*).

More detailed discussion is provided below for those species for which suitable habitat is present on or immediately adjacent to the site where Plan activities may impact them, or for which resource agencies have expressed particular concern in the Plan vicinity.

Federal or State Endangered or Threatened Species

Vernal Pool Tadpole Shrimp (*Lepidurus packardii*). Federal Listing Status: Endangered; State Listing Status: None. Vernal pool tadpole shrimp occur primarily in the Central Valley and range from east of Redding in Shasta County south to the San Luis National Wildlife Refuge in Merced County (59 FR 48136). Outside of the Central Valley, a single population of the vernal pool tadpole shrimp occurs in the Warm Springs Seasonal Wetland in Fremont, Alameda County (Caires *et al.* 1993). They have also been found on the adjoining Pacific Commons site. Tadpole shrimp eat microscopic organisms, detritus, dead tadpoles, earthworms, frog eggs and mollusks. Females deposit eggs on vegetation on the pool bottom. Pools containing vernal pool tadpole shrimp have clear to highly turbid water and range in size from less than an acre to 90 acres. These pools may be highly turbid and mud-bottomed or grass-bottomed in old alluvial soils underlain by hardpan. Pools generally have low conductivity, low total dissolved solids and low alkalinity (Eng *et al.* 1990). Tadpole shrimps are demersal (i.e., they are generally benthic, but are capable of swimming), and they burrow in soft sediments. The periodic flooding that formerly allowed vernal pool species to disperse became rare due to the construction of dams, drainage canals and other barriers that diminished periodic flooding. However, vernal pool tadpole shrimp eggs can pass through bird digestive tracts and may be dispersed by birds.

There are no records of tadpole shrimp on the TCRDF site, and the CNDDB lists no records from the areas immediately east of the site (i.e., on the other side of the railroad tracks). However, suitable habitat in the form of seasonal pools is present in the areas east of the railroad tracks, and the species may be present in those areas. On the site itself, the only areas of seasonal ponding that possess suitable hydrology for tadpole shrimp occur in the disturbed seasonal wetland depressions.

Because waterbirds foraging in these seasonal wetland depressions are likely to move between the site and other seasonal pools northeast of the railroad tracks (where habitat is more suitable for tadpole shrimp), it is possible that eggs or cysts of the tadpole shrimp may be dispersed on the feet of, or via the digestive tracts of, these birds. Therefore, it is possible that tadpole shrimp disperse to the Plan Area on occasion. However, pools may be too alkaline to support tadpole shrimp, and the ongoing resource recovery activities at the TCRDF disturb all pools enough to preclude the presence and persistence of suitable, stable aquatic habitat for this species.

California Tiger Salamander (*Ambystoma californiense*). Federal Listing Status: Threatened; State Listing Status: Threatened. The California tiger salamander's preferred breeding habitat includes temporary, ponded environments (minimum of three to four months; e.g., vernal pool, ephemeral pool, or human-made ponds) surrounded by uplands that support small mammal burrows. The species will utilize permanent ponds provided that aquatic, vertebrate predators are not present. Such ponds provide breeding and larval habitat, while small mammal burrows (e.g., ground squirrel and Botta's pocket gopher) in the upland habitats support juvenile and adult salamanders during the dry season.

Adults often emerge from the burrows at night during the first moderate to heavy winter rains of the season and migrate to vernal pools, seasonal ponds, or human-made ponds, where they lay their eggs. The eggs are attached singly, or in small clumps, to vegetation under water, or directly to the bottom of a pool if emergent vegetation is lacking. The eggs hatch approximately one week after they are deposited. The larvae prey upon invertebrates and other amphibian larvae for between three and six months, during which time they metamorphose into juveniles. Juveniles typically leave the pools in mass during a one- to two-week period, usually as the ponds dry. The juveniles then search for available burrows. Juveniles feed and grow in these burrows until the following winter (Jennings and Hayes 1994).

There are no records of tiger salamanders on the TCRDF site. In the Plan Area, the only areas of seasonal ponding occur in disturbed seasonal wetland depressions affected by recent, and ongoing, disturbance due to the ongoing resource recovery activities so that no stable pools are present in the Plan area. Furthermore, ponding in these pools is not of sufficient duration (i.e., 3.5 months) for successful tiger salamander breeding in most years (Jennings and Hayes 1994), although in very wet years, water may pond in such depressions for at least 3.5 months if they are deep enough. The disturbed seasonal wetland depressions on the site and the ditch along the railroad tracks (between the eastern boundary of the site and the railroad tracks) are also likely too saline to support a breeding population of tiger salamanders. Although salinity of the pools on the Plan Area was not measured, these ponds support healthy stands of pickleweed, indicating that they likely are too saline to support tiger salamanders. Eggs cannot survive in water of salinity greater than 6 to 7 parts per thousand, and larvae cannot survive in water of salinity greater than 7 to 8 parts per thousand (Mark Jennings, unpublished data). Anderson et al. (1971) suggested that salt marshes can act as barriers to tiger salamanders and that brackish water, such as that found in San Francisco Bay salt marshes, is probably too saline for this species.

Tiger salamanders have been recorded approximately 0.5 mi east of the site, and suitable habitat in the form of seasonal freshwater pools are present in the off-site areas immediately east of the railroad tracks. Tiger salamanders are known to disperse up to a mile or more from aquatic

breeding sites to upland aestivation sites, and thus the Plan Area is within dispersal distance of breeding sites to the east. The railroad tracks represent an impediment to dispersal, but voids in the rocky railroad bed are large enough to allow salamanders to disperse onto the site. Therefore, dispersing individuals of this species may occur on the site, although having to cross through heavily disturbed portions of the Plan Area to reach the ruderal habitats shown on Figure 3 would be difficult, further limiting the potential for this species to reach refugia on the site. Potential upland habitat within the Plan Area is very limited, as very few small mammal burrows are found in the Plan Area, and the frequent, ongoing disturbance in the Multi Use Zones limits the suitability of any upland habitat on the site for the tiger salamander.

In summary, the California tiger salamander is unlikely to breed, or at least to breed successfully, in the Plan Area due to the saline nature and (in most years) short duration of ponding in the disturbed seasonal wetland depressions on the site. Occasional dispersants from breeding sites to the east may reach the site, but the limited habitat within the Plan Area is considered unsuitable upland habitat for this species due to the paucity of mammal burrows and frequent, intensive disturbance of this area.

Salt Marsh Harvest Mouse (*Reithrodontomys raviventris*). Federal Listing Status: Endangered; State Listing Status: Endangered, Protected. The salt marsh harvest mouse is found only in saline wetlands of San Francisco Bay and its tributaries. The southern subspecies *R. r. raviventris* is restricted to an area from San Mateo County and Alameda County along both sides of San Francisco Bay south to Santa Clara County. The salt marsh harvest mouse occurs with the closely related, ubiquitous and abundant western harvest mouse (*R. megalotis*) at upper edges of marshes and in marginal areas. Both animals occur in pickleweed, but the salt marsh harvest mouse replaces the western harvest mouse in denser areas of pickleweed. *R. raviventris* has declined substantially in recent decades. This decline is due primarily to diking and filling of marshes, subsidence, and changes in salinity brought about by increasing volumes of fresh water discharge into the bay.

Although intensive, species-specific surveys were not conducted for this Plan evaluation, Dr. Howard Shellhammer captured two salt marsh harvest mice approximately 1 mi southeast of the site (CNDDDB 2011). These individuals were captured in a narrow band of pickleweed that filled a shallow ditch between a fence line and the base of the bed of the railroad track. Although this habitat was not considered optimal habitat, this species may occur where similar pickleweed habitat is present in drainage ditch or disturbed seasonal wetland habitats. Additionally, high-quality habitat for the salt marsh harvest mouse occurs throughout most of the muted marsh and in the northern portion of the pickleweed/cattail wetland adjacent to the Plan Area. The salt marsh harvest mouse is expected to occur in these portions of the TCRDF and may forage into the Plan Area occasionally. On 25 May 2011, annual pickleweed plants were present within the disturbed seasonal wetland depression in Multi Use Zone 2. The Zone is disturbed as operations require, and the seasonal wetland depression and associated vegetation had been completely altered on a follow-up site visit on 18 July 2011. Although no high-quality salt marsh harvest mouse habitat occurs within the Plan Area, these mice may disperse into ruderal habitat on the levee between the muted-tidal salt marsh and Multi Use Zone 2, and they may disperse into the seasonal wetland depression in the southern part of the site when pickleweed vegetation grows between periods of disturbance.

California Species of Special Concern

Northern Harrier (*Circus cyaneus*). **Federal Listing Status:** None; **State Listing Status:** **Species of Special Concern.** The northern harrier is commonly found in open grasslands, agricultural areas and marshes. Nests are built on the ground in areas where long grasses provide cover and protection. Harriers hunt for a variety of prey, including rodents, birds, frogs, reptiles, and insects by flying low and slow in a traversing manner utilizing both sight and sound to detect prey items.

Harriers forage occasionally in the ruderal habitats in the Plan Area, and the ruderal habitat southeast of the Plan Area may support breeding by a single pair of harriers. The tall herbaceous vegetation in the southern part of Multi Use Zone 2 is likely used for foraging as a contiguous portion of the ruderal habitat; however, northern harriers would not nest close enough to Multi Use Zone 2 to be disturbed by Plan activities due to the current continuous disturbance in the developed area.

Burrowing Owl (*Athene cunicularia*). **Federal Listing Status:** None; **State Listing Status:** **Species of Special Concern.** The burrowing owl is a small, terrestrial owl of open country. These owls prefer annual and perennial grasslands, typically with sparse or nonexistent tree or shrub canopies. In California, burrowing owls are found in close association with California ground squirrels. Owls use the abandoned burrows of ground squirrels for shelter and nesting. Burrowing owl populations are thought to be declining throughout much of their range in the United States. Loss of habitat and campaigns against the burrowing mammals upon which burrowing owls depend for nesting habitat are suspected causes of this decline. The Bay Area burrowing owl population is estimated to have lost 61% of its nesting colonies since the late 1980s (DeSante and Ruhlen, unpublished data). The South Bay region (from San Mateo on the Peninsula and Alameda County on the East Bay) supports the state's fourth largest discrete population.

No evidence of burrowing owls was observed on the site during surveys conducted for the Plan. However, this species is known to occur in the grasslands and ruderal habitats east and north of the site, and burrowing owls are expected to occur on the site at least as occasional foragers. The Plan Area provides only marginal, and very limited, foraging habitat due to the presence of tall, dense vegetation in less disturbed areas and the frequent, ongoing disturbance over much of the site. However, the shorter ruderal vegetation on the slopes of the landfill adjacent to the site provide higher-quality foraging habitat for burrowing owls. California ground squirrel burrows in habitat areas adjacent to the site provide potential roosting and nesting sites for the species, so burrowing owls could potentially nest or roost on the landfill in close proximity to the Plan Area.

Loggerhead Shrike (*Lanius ludovicianus*). **Federal Listing Status:** None; **State Listing Status:** **Species of Special Concern.** The loggerhead shrike is a predatory songbird that prefers open habitats interspersed with shrubs, trees, poles, fences, or other perches from which it can hunt. Nation-wide, loggerhead shrike populations have declined significantly over the last 20 years. Even with this trend, loggerhead shrikes are still considered a fairly common species in California. Nests are built in densely foliated shrubs or trees, often containing thorns, which offer protection from predators and upon which prey items are impaled.

Loggerhead shrikes forage in the ruderal habitats in the Plan Area, and the trees near the corporation yard provide potential nesting sites for the species. At most, however, one or two pairs would be expected to breed on the site due to the paucity of trees and shrubs.

San Francisco Common Yellowthroat (*Geothlypis trichas sinuosa*). Federal Listing Status: None; State Listing Status: Species of Special Concern. The San Francisco common yellowthroat inhabits emergent vegetation and breeds in fresh and brackish marshes and associated upland areas in the San Francisco Bay Area. This subspecies is one of the approximately 12 subspecies of common yellowthroat recognized in North America. The San Francisco common yellowthroat breeds from mid-March through early August and pairs frequently raise two clutches per year. Because subspecies cannot be reliably distinguished in the field, determination of the presence of San Francisco common yellowthroats can be achieved only by locating a nest in the breeding range known for this subspecies, or by observing them during the summer months when only the San Francisco common yellowthroat is present. Although little is known regarding the movements of this taxon, the wintering areas have been described as coastal salt marshes from the San Francisco Bay region to San Diego County (Grinnell and Miller 1944).

San Francisco common yellowthroats breed primarily in fresh and brackish marshes. In the South Bay, this species is a fairly common breeder in such habitats virtually wherever they occur, although very small patches of marsh often lack this species. Several males were observed singing in portions of Multi Use Zone 2 in the tall ruderal vegetation in the southeast portion of Multi Use Zone 2, and this species is expected to nest in these areas and the adjacent ruderal habitat and muted tidal salt marsh habitat outside the Plan Area.

Alameda Song Sparrow (*Melospiza melodia pusillula*). Federal Listing Status: None; State Listing Status: Species of Special Concern. The Alameda song sparrow is one of three subspecies of song sparrow breeding only in salt marsh habitats in the San Francisco Bay area. This subspecies is found in marshes bordering the South San Francisco Bay. Here it is most abundant in the taller vegetation found along tidal sloughs, including pickleweed, salt marsh cordgrass and marsh gumplant, nesting from early March to mid-August. Although it is occasionally found in bulrushes in brackish marshes, the Alameda song sparrow is very sedentary and is not known to disperse upstream into freshwater habitats (Basham and Mewaldt 1987). Populations of the Alameda song sparrow have declined due to the loss of salt marshes around the Bay, although within suitable habitat it is still fairly common.

Song sparrows were observed in ruderal portions of the Plan Area, particularly in the southeast portion of Multi Use Zone 2, and song sparrows are expected to nest in these areas and in ruderal grassland and muted tidal salt marsh habitat areas adjacent to the Plan Area. The location of the interface between populations of the Alameda song sparrow and those of the race breeding in freshwater habitats (*M. m. gouldii*) in the vicinity of the Plan Area is not well known due to difficulties in distinguishing individuals of these two races in the field. Conclusive identification of individual song sparrows as *pusillula* (rather than the widespread upland race *M. m. gouldii*) is not possible unless the birds are examined in the hand. Therefore it is difficult to make confident determinations about the racial identity of song sparrows breeding on the Plan Area.

Due to the freshwater influence in the upland areas of the Plan Area, it is possible that at least some of the song sparrows breeding on the site are *gouldii*. However, given the proximity of these habitats to saline habitats on and adjacent to the site, we recommend assuming that all song sparrows breeding on the Plan Area could be *pusillula* unless they can be examined in the hand.

Bryant's Savannah Sparrow (*Passerculus sandwichensis alaudinus*). **Federal Listing Status: None; State Listing Status: Species of Special Concern.** Bryant's savannah sparrow, a subspecies of the widely distributed savannah sparrow, is a California endemic ranging along the immediate coast from Humboldt Bay, Humboldt County, in the north; to Point Conception, Santa Barbara County, in the south (Wheelwright and Rising 2008). Bryant's savannah sparrows breed from April through July (Dobkin and Granholm 1990) in the upper portions of tidally-influenced marshes, grasslands and ruderal habitats adjacent to tidal marshes, moist grasslands and pastures within the fog belt, and occasionally in drier grasslands up to 40 km inland. Ideal habitat is comprised of extensive moist grassland or upper marsh habitats with relatively short vegetation, some patches of bare ground, and nearby drainages (Fitton 2008). Cup nests are built on or near the ground in dense vegetation (Wheelwright and Rising 2008). Nonbreeding habitat preferences are little-known, but may be similar to breeding season habitats. The range of the Bryant's savannah sparrow has remained relatively stable, but numbers have declined, largely due to habitat loss, fragmentation, and degradation (Fitton 2008).

Bryant's savannah sparrows have been documented breeding in muted tidal marshes adjacent to the Plan Area (H. T. Harvey & Associates 2009), and although none were detected within the Plan Area during the 2011 reconnaissance survey or during subsequent site visits, the species could breed on-site in low numbers in areas where grassy ruderal or marsh vegetation has remained undisturbed for a long period of time.

Salt Marsh Wandering Shrew (*Sorex vagrans halicoetes*). **Federal Listing Status: None; State Listing Status: Species of Special Concern.** Formerly more widely distributed in the Bay Area, this small insectivorous mammal is now confined to salt marshes of the South Bay. Salt marsh wandering shrews occur most often in medium-high wet tidal marsh (6 to 8 ft above sea level), with abundant driftwood and other debris for cover. They have also been recorded occasionally in diked marsh. This species is typically found in fairly tall pickleweed, in which these shrews build nests. They breed and give birth during spring, although very little is known regarding the natural history of the species.

This subspecies was formerly recorded from marshes of San Pablo and San Francisco bays in Alameda, Contra Costa, San Francisco, San Mateo, and Santa Clara counties, but captures in recent decades have been very infrequent anywhere in these areas. Shrews are occasionally captured during salt marsh harvest mouse trapping studies, but the difficulty in identifying them to species has precluded a better understanding of the current distribution of this species in the South Bay. It is unknown whether the salt marsh wandering shrew occurs on the TCRDF site. However, because the species has been recorded in diked marshes, the pickleweed-dominated habitat in the muted tidal salt marsh and pickleweed/cattail marsh on the TCRDF site adjacent to the Plan Area are considered potential habitat for this species. On 25 May 2011, annual pickleweed plants were present within the disturbed seasonal wetland depression in Multi Use Zone 2. The Zone is disturbed as operations require, and the seasonal wetland depression and

associated vegetation had been completely altered on a follow-up site visit on 18 July 2011. Although no high-quality salt marsh wandering shrew habitat occurs within the Plan Area, shrews may disperse into ruderal habitat on the levee between the muted-tidal salt marsh and Multi Use Zone 2, and they may disperse into the seasonal wetland depression in the southern part of the site when pickleweed vegetation grows between periods of disturbance..

Sensitive and Regulated Habitats

U.S. Army Corps of Engineers Jurisdictional Habitats. Areas meeting the regulatory definition of “Waters of the U.S.” (jurisdictional waters) are subject to the jurisdiction of the USACE under provisions of Section 404 of the Clean Water Act (1972) and Section 10 of the Rivers and Harbors Act (1899). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as “Waters of the U.S.,” tributaries of waters otherwise defined as “Waters of the U.S.,” the territorial seas, and wetlands (termed Special Aquatic Sites) adjacent to “Waters of the U.S.” (33 CFR, Part 328, Section 328.3). Wetlands on non-agricultural lands are identified using the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987).

Construction activities within jurisdictional waters are regulated by the USACE. The placement of fill into such waters must comply with permit requirements of the USACE. No USACE permit will be effective in the absence of state water quality certification pursuant to Section 401 of the Clean Water Act. The State Water Resources Control Board is the state agency (together with the Regional Water Quality Control Boards) charged with implementing water quality certification in California.

A formal wetland delineation prepared in 1992 and approved by the USACE located the jurisdictional wetland boundaries along the southwestern edge of the landfill and along the berm separating the Resource Recovery Area from the muted tidal salt marsh (Blodgett 1992 in LSA 1992). An updated delineation in 2002 again designated all areas south/southeast of this berm (i.e., the muted tidal salt marsh habitat in Figure 3) to be within the regulatory jurisdiction of the USACE (WRA 2002); this delineation, which dealt primarily with Section 404 issues, was apparently not submitted to the USACE for confirmation, although the USACE did confirm in a 18 November 2002 letter to Waste Management that no historic Section 10 waters are present within the Resource Recovery Area.

The two disturbed seasonal wetland depressions and drainage ditches (Figure 3) within the Plan Area have been created either specifically as detention basins or have been excavated incidental to ongoing resource recovery operations (e.g., frequent movement of fill material). Such features have generally been considered non-jurisdictional by the USACE in the past due to their manmade nature, USACE-authorized fill-material holding area, and ongoing use for construction and operations. However, based on field characteristics such as the presence of hydrophytic vegetation, it is possible that these areas may be regulated by the USACE and/or the RWQCB. An update to WRA’s 2002 delineation would be necessary to ultimately define the limits of the USACE’s jurisdiction under Section 404 on this site.

California Department of Fish and Game Jurisdictional Habitats. The CDFG potentially extends the definition of stream to include “intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams (USGS), and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife” (CDFG 1994). Such areas on the site were determined using methodology described in *A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600-1607* (CDFG 1994).

Activities that result in the diversion or obstruction of the natural flow of a stream, or which substantially change its bed, channel or bank, or which utilize any materials (including vegetation) from the streambed, may require that the project applicant enter into a Streambed Alteration Agreement with the CDFG.

Reconnaissance-level field surveys were also conducted within the Plan Area for streams and other waterways potentially under the regulatory jurisdiction of the CDFG. Given the manmade nature of the drainage ditches found within the site boundaries, and its lack of vegetative cover, it is our opinion that the CDFG would likely not assert jurisdiction over this waterway. Based on past experience working with CDFG representatives in similar habitats to those encountered on site, it is our determination that there are no channels, drainages or waterways that they would claim under the Fish and Game Code as cited above.

Sensitive Plant Communities. The CDFG ranks certain rare or threatened plant communities, such as wetlands, meadows, and riparian forest and scrub, as ‘threatened’ or ‘very threatened’. These communities are tracked in the CNDDDB. The CDFG also maintains lists of sensitive vegetation alliances and associations (CDFG 2010). Impacts to CDFG sensitive plant communities, alliances or associations, or any such habitats identified in local or regional plans, policies, and regulations, must be considered and evaluated under CEQA (California Code of Regulations: Title 14, Div. 6, Chap. 3, Appendix G). Furthermore, aquatic, wetland and riparian habitats are also afforded protection under applicable federal, state, or local regulations, and are generally subject to regulation, protection, or consideration by the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), CDFG, and/or the USFWS.

A query of sensitive habitats in Rarefind (CNDDDB 2011) was performed for the Milpitas 7.5-minute USGS quadrangle and the surrounding seven quadrangles. The CNDDDB (2011) identified three sensitive habitats as occurring within this region: northern coastal salt marsh, valley oak woodland and sycamore alluvial woodland (Figure 4). The Plan Area does not support any of these communities.

Ordinance and Landmark Trees. The City of Fremont Tree-Removal Controls (Fremont Municipal Code, Sec. 4-5101) serve to protect all trees having a trunk diameter of 6 inches or greater at a height measured 4.5 ft above the natural grade of slope, growing within the city limits. The ordinance protects all trees other than commercial nut and fruit bearing trees, except black walnut and olive trees, or any tree located on a lot or parcel of land which is less than ten thousand square ft in area. A tree-removal permit is required from the City of Fremont city manager for the removal of ordinance-sized trees. The City of Fremont also maintains a list of Landmark Trees (Fremont Municipal Code, Sec. 4-5109) which serves to protect trees having significant girth, height, spread, or is of some unique quality or species. It is unlawful to vandalize, mutilate, remove, or destroy landmark and ordinance trees. In addition, the City of Fremont requires, prior to the issuance of any approval or permit for construction of any improvement of a project site, that all trees on a project site be inventoried and categorized in a Tree Location Plan according to size, species, and spot elevation at the base of each tree (Fremont Municipal Code, Sec. 4-5107). Some of the eucalyptus trees on the site appear to be of ordinance size, although no tree survey was performed as part of this study.

IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

The proposed Plan may have effects on the biological resources of the Plan Area. The California Environmental Quality Act (CEQA) and the CEQA Guidelines provide guidance in evaluating project impacts and determining which impacts will be significant. CEQA defines “significant effect on the environment” as “a substantial adverse change in the physical conditions which exist in the area affected by the proposed project.” Under CEQA Guidelines section 15065 and Appendix G, a project’s effects on biotic resources may be significant when a project would:

- “have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory”
- “have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service”
- “have a substantial adverse effect on any riparian habitat or other sensitive natural community (e.g., oak woodland) identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service”
- “have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act”
- “interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites”
- “conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance”
- “conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan”

REGULATORY SETTING

Biological resources are regulated by the following:

Federal Endangered Species Act. The Federal Endangered Species Act (FESA) protects listed wildlife species from harm or “take” which is broadly defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. Take can also include habitat modification or degradation that directly results in death or injury to a listed

wildlife species. An activity can be defined as “take” even if it is unintentional or accidental. Listed plant species are provided less protection than listed wildlife species. Listed plant species are legally protected from take under FESA if they occur on federal lands or if the project requires a federal action, such as a Section 404 fill permit.

The USFWS has jurisdiction over federally listed threatened and endangered species under the FESA. The USFWS also maintains lists of proposed and candidate species. Species on these lists are not legally protected under the FESA, but may become listed in the near future and are often included in their review of a project.

California Endangered Species Act. The California Endangered Species Act (CESA) prohibits the take of any plant or animal listed or proposed for listing as rare (plants only), threatened, or endangered. In accordance with the CESA, CDFG has jurisdiction over state-listed species (California Fish and Game Code §2070). Additionally, the CDFG maintains lists of “species of special concern” that are defined as species that appear to be vulnerable to extinction because of declining populations, limited ranges, and/or continuing threats.

California Environmental Quality Act. Section 15380(b) of the CEQA Guidelines provides that a species not listed on the federal or state lists of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definitions in FESA and CESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals. This section was included in the guidelines primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on a species that has not yet been listed by either the USFWS or CDFG.

Clean Water Act. Under Section 404 of the Clean Water Act, the Corps is responsible for regulating the discharge of fill material into waters of the United States. Waters of the U.S. and their lateral limits are defined in 33 CFR Part 328.3 (a) and include streams that are tributary to navigable waters and their adjacent wetlands. Wetlands that are not adjacent to waters of the U.S. are termed “isolated wetlands” and, depending on the circumstances, may also be subject to Corps jurisdiction.

California Water Quality and Waterbody Regulatory Programs. Pursuant to Section 401 of the federal Clean Water Act, projects that are regulated by the Corps must obtain water quality certification from the RWQCB. This certification ensures that the project will uphold state water quality standards. The RWQCB may impose mitigation requirements even if the Corps does not.

The CDFG exerts jurisdiction over the bed and banks of rivers, lakes, and streams according to provisions of Section 1601 to 1603 of the Fish and Game Code. The Fish and Game Code requires a Streambed Alteration Agreement for the fill or removal of material within the bed and banks of a watercourse or waterbody and for the removal of riparian vegetation.

The Federal Migratory Bird Treaty Act (16 U.S.C. Sec. 703) prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary of

the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. Most native bird species in the Plan area are covered by this Act.

The **California Native Plant Society** (CNPS), a non-governmental conservation organization, has developed lists of plant species of concern in California. Vascular plants included on these lists are defined as follows:

- List 1A Plants considered extinct.
- List 1B Plants rare, threatened, or endangered in California and elsewhere.
- List 2 Plants rare, threatened, or endangered in California but more common elsewhere.
- List 3 Plants about which more information is needed - review list.
- List 4 Plants of limited distribution-watch list.

Although the CNPS is not a regulatory agency and plants on these lists have no formal regulatory protection, plants appearing on List 1B or List 2 are, in general, considered to meet CEQA's Section 15380 criteria and adverse effects to these species may be considered significant.

KEY ASSUMPTIONS

The following impact analysis is based on the Plan description dated March 2011 and proposed site plans dated 28 February 2011 provided by the City of Fremont. We have assessed potential impacts from new Plan-related activities, or from Plan-related activities proposed to increase in intensity, in the context of baseline site conditions, which already include a high level of ongoing activity and disturbance.

IMPACTS FOUND TO BE LESS THAN SIGNIFICANT

Disturbance to and Loss of Disturbed Seasonal Wetland Depression, Ruderal, and Developed Habitat

The disturbed seasonal wetland depression habitat and ruderal habitat within the Plan Area is manipulated during resource recovery operations. The material present in this area supports an assemblage of primarily non-native plant species. No naturally occurring special-status plant species were found in this area (but see *Impacts to Hall's Bushmallow* below), nor are any expected to occur in this disturbed habitat. Its biological value is limited due to the frequent and ongoing disturbance and the lack of stable (i.e., infrequently disturbed) wetlands or pools. Although the disturbed seasonal wetland depression in Multi Use Zone 2 may provide some of the functions of wetlands or aquatic habitats by providing winter foraging habitat for waterbirds, this artificial feature is continuously disturbed. The much higher-quality, naturally occurring wetlands adjacent to the Plan Area to the south are not manipulated and offer contiguous, natural habitat for plant and wildlife use. Loss of the disturbed seasonal wetland depression and ruderal habitat as a result of Plan activities may result in the displacement of some common wildlife species and may result in a loss of habitat for these species. However, the site represents a very

small fraction of such habitat available regionally, and the loss of such habitat thus will not result in significant impacts to biological resources.

Ruderal and developed habitats predominantly support common plant and wildlife species. These habitats are locally and regionally common, and the majority of biotic resources associated with these habitats will continue to be abundant following implementation of the Reuse Plan. Loss of these habitats would not result in significant impacts to biological resources.

Disturbance to Aquatic Habitat within the Drainage Ditch

The drainage ditches within the Plan Area bordering the developed facilities, water tank, and stockpiling areas are man-made. These ditches provide limited, low-quality habitat for wildlife, and habitat of this type is regionally abundant. Therefore, impacts to these ditches (e.g., by filling or sedimentation during Plan-related activities) would be less than significant. However, impacts to these ditches may be regulated by the USACE and/or the RWQCB under sections 401 and 404 of the Clean Water Act.

Impacts to Hall's Bushmallow

Two individuals of the CNPS listed sensitive plant Hall's bushmallow were identified within the updated improvement area in 2011. Hall's bushmallow is known from 36 extant CNDDDB (2011) records throughout the state of California. The majority of these records are in chaparral or coastal scrub habitats at elevations ranging from 30 ft to 2500 ft. However, one record approximately 5 mi south of the TCRDF is in disturbed pickleweed salt marsh habitat. The onsite occurrence is in developed/ruderal habitat, with none of the associated coastal scrub or chaparral species present, and is nearly at sea level. Historical 1987 aerials show that the ground was completely leveled and devoid of vegetation where the two shrubs have now become established. This indicates that the two shrubs have become naturalized since development of the TCRDF, and may have been introduced by natural means such as through bird movement, herbivore caching, or water movement from the nearby drainage ditch, or unnatural means such as germination of dormant seed transported in fill soils, or intentional planting.

Although there is one nearby occurrence of Hall's bushmallow in disturbed pickleweed salt marsh, this single occurrence is the only salt marsh occurrence for the species and appears to be an outlier. The onsite occurrence has naturalized since the establishment of the TCRDF in developed/disturbed habitat outside of the described natural habitat and elevational range of the species (CNPS 2011). Habitat on the site is unsuitable to allow for the establishment of a viable population of the species, even if these two individuals were protected. Therefore, we have determined that impacts to these two shrubs will be less than significant.

Impacts to Certain Special-status Animal Species and Their Habitats

A number of special-status wildlife species occur in the Plan Area only as occasional visitors, migrants, or transients. These species may occasionally forage on the site, but they are not expected to breed there. These species include the short-eared owl, American peregrine falcon, golden eagle, white-tailed kite, yellow warbler, and tricolored blackbird. The Plan activities will have no effect on the breeding success of any of these species, and only limited, very low-quality

habitat for these species is present in the Plan Area. Although the project may result in a very small reduction of foraging habitat available to them locally or regionally, due to the abundance of similar habitats locally and regionally and the infrequency with which most of these species occur on the Plan Area, the Plan will have a less-than-significant impact these species that may occasionally occur on, but not breed, on the site.

Several other special-status species, including the northern harrier, burrowing owl, loggerhead shrike, Alameda song sparrow, Bryant's savannah sparrow, and San Francisco common yellowthroat, may breed within (particularly when ruderal and seasonal wetland habitats are more extensive and undisturbed for a period of time) or immediately adjacent to the Plan Area (e.g., in ruderal habitat to the southeast and pickleweed marsh to the southwest). At most, one pair of harriers may nest in areas southeast or south of the Plan Area, and they are unlikely to nest close enough to the Plan area to be disturbed by Plan activities. One or two pairs of shrikes may nest on the site. Impacts to breeding habitat of one or two pairs of this species will not substantially impact regional populations, and thus Plan impacts to this species and its habitat are less than significant. This Plan will impact only a very small amount of habitat suitable for use by nesting Alameda song sparrows, Bryant's savannah sparrows, and San Francisco common yellowthroats. Because the Plan will impact only a very small proportion of the habitat available to these species regionally, impacts to these species' habitat would likewise be less than significant (however, see "*Potential Loss of Active Nests of the Alameda Song Sparrow, Bryant's Savannah Sparrow, and San Francisco Common Yellowthroat*" below).

Impacts to burrowing owl habitat in the Plan Area will be minimal; due to the paucity of ground squirrel burrows in heavily disturbed areas and presence of very tall vegetation, no suitable nesting or roosting habitat is present in the Plan Area itself, and foraging habitat for this species is of very limited extent and quality in the Plan Area. Therefore, impacts to burrowing owl habitat are also considered less than significant (but see "*Potential Impacts to Individual Burrowing Owls and Their Burrows*" below).

It is possible that very low numbers of California tiger salamanders dispersing from breeding ponds east of the Plan Area could potentially occur on the site in the Multi Use Zones. It is also possible that vernal pool tadpole shrimp may occasionally be transported to the site (e.g., by birds). However, the site does not provide suitable breeding habitat for either species due to the salinity and level of disturbance of seasonal pools in the Plan Area. We do not expect implementation of the Plan to affect water quality where California tiger salamanders or vernal pool tadpole shrimp could occur (e.g., east of the railroad track or the previously disturbed seasonal wetland depressions on the TCRDF southeast of the Plan Area). If these species do occur on the site, Plan activities and construction on the site may result in the loss of habitat occupied by these two species. However, such habitat is of such limited value (due to disturbance) that the loss of this habitat would be a less-than-significant impact, especially in light of the availability of much more suitable habitat managed for these species northeast of the railroad tracks. In addition, given the infrequency with which individual vernal pool tadpole shrimp are expected to occur on the site (if at all), impacts to occasional individuals would be less than significant. Occasional California tiger salamander dispersants from breeding sites to the east may reach the site, but the habitat within the Plan Area is considered unsuitable upland habitat for this species due to the limited area of potential habitat, paucity of mammal burrows,

and frequent, intensive disturbance of this area. Plan implementation would have only very limited effects on any one tiger salamander population given the low probability of occurrence of the species in the first place, the low number of individuals that could potentially be present on the Project site, and the low number that could survive existing levels of disturbance and actually be able to disperse back to a suitable breeding location. As a result, such impacts are not expected to result in a substantial population-level effect. Based on the low probability of impacts to individual tiger salamanders and the low number of individuals that could possibly be impacted if the species is present during Plan implementation, potential loss of individual California tiger salamanders would be a less-than-significant impact. It should be noted that FESA and CESA consultation with the USFWS and CDFG, respectively, may be necessary if Plan implementation will impact the California tiger salamander and FESA consultation may be necessary if Plan implementation will impact vernal pool tadpole shrimp.

IMPACTS THAT ARE LESS THAN SIGNIFICANT WITH MITIGATION

Potential Impacts to Individual Salt Marsh Harvest Mice and Salt Marsh Wandering Shrews

The salt marsh harvest mouse (federally and state-listed as endangered and a state fully protected species) and the salt marsh wandering shrew (state species of special concern) are expected to occur in the muted tidal salt marsh, the pickleweed/cattail habitat, and possibly occasionally in the drainage ditch and disturbed seasonal wetland depression along the southwest perimeter of the Plan Area adjacent to the muted-tidal marsh. Only the drainage ditch and the disturbed seasonal wetland depression adjacent to the muted-tidal salt marsh are expected to be impacted directly by the Plan. Neither species is expected to occur within the Plan Area adjacent to the pickleweed/cattail habitat due to the lack of vegetation at the interface. However, the salt marsh harvest mouse, and possibly the salt marsh wandering shrew, could potentially occur in ruderal vegetation within the Plan Area on or near the levee adjacent to the off-site muted tidal salt marsh. Grading of dense vegetation in the drainage ditch, disturbed seasonal wetland depression, or adjacent ruderal habitat could result in the injury or mortality of individuals. Due to the regional rarity of these species, such loss would be considered a significant impact. To reduce impacts to individual salt marsh harvest mice and salt marsh wandering shrews to less-than-significant levels, Mitigation Measures 1a and 1b will be implemented prior to Plan-related activities in the southern portion of Multi Use Zone 2. Note that these mitigation measures may require prior USFWS approval due to the potential for “take” of the federally listed mouse.

Mitigation Measure 1a. Exclusion of Individuals from Plan Area. A barrier to exclude salt marsh harvest mice and salt marsh wandering shrews from the Plan’s impact areas shall be constructed under the guidance of a qualified biologist. The barrier will be a smooth metal fence (e.g., aluminum flashing) that is 30 inches high and toed into the soil at least 3 inches. A barrier of this height will not be tall enough to become a perch for avian predators. Prior to installation of the barrier, vegetation within the impact area and within 2 ft outside of the barrier shall be removed by hand prior to installation of the barrier to remove any cover that might be used by harvest mice or wandering shrews and to encourage any individuals present in these areas to move to the adjacent, vegetated salt marsh. The barrier will be placed along the Plan Area boundary (approximately 2 ft from the boundary) with the muted tidal salt marsh habitat (i.e., the

southwest perimeter). All fence construction and vegetation removal shall be conducted under the supervision of a qualified biological monitor. The barrier must be monitored at least twice annually and repaired as needed. Vegetation outside of the fence, the 2-ft buffer area, must be maintained so no vegetation hangs over the barrier.

Mitigation Measure 1b. On-site Construction Crew Education Program. A worker education program will take place before the commencement of Plan-related activities in the southern portion of Multi Use Zone 2. A qualified biologist will explain to construction workers how best to avoid impacts to salt marsh harvest mice and salt marsh wandering shrews. The qualified biologist will conduct a training session that would be scheduled as a mandatory informational field meeting for operators, contractors, and all construction or operations personnel. The field meeting will include topics on species identification, life history, descriptions, and habitat requirements. Handouts, illustrations, photographs, and project mapping showing areas where minimization and avoidance measures are being implemented will be included as part of this education program. The program will increase the awareness of the operators, contractors, and construction or operations workers about existing federal and state laws regarding special-status species as well as increase their compliance with conditions and requirements of resource agencies.

Potential Impacts to Individual Burrowing Owls and Their Burrows

No burrowing owls were observed within the Plan Area during reconnaissance-level surveys. However, burrowing owls (listed as a species of special concern by the CDFG) occur in a number of locations immediately north and east of the site. Foraging habitat for burrowing owls is of very limited extent and quality due to the intensity of baseline disturbance and the very tall, dense vegetation that occurs in ruderal habitats during times when certain areas are not being actively disturbed. For these reasons, as well as the scarcity of ground squirrel burrows in the Plan Area, no suitable nesting or roosting habitat is present in the Plan Area itself.

However, ground squirrel burrows adjacent to the site (primarily on the inactive slopes of the landfill nearby) provide potential nesting and roosting burrows, as those landfill slopes are not as regularly and intensively disturbed as the Plan Area. Therefore, it is possible that small numbers of burrowing owls could roost or nest in burrows near enough to the Plan Area to be affected by the Plan activities.

Despite the occurrence of burrowing owls in multiple locations in the western Fremont and Newark areas, this species is regionally rare and declining. Therefore, any impacts from the Plan that result in the injury or mortality of individual owls or active nests, such as excavation or grading, or Plan-related disturbance that results in the abandonment of eggs or nestlings, would be considered significant. CDFG generally considers the minimum distance from an active nest that a new, more intensive activity can occur without disturbance of the nest to be 250 ft. Therefore, for new Plan-related activities within 250 ft of a burrowing owl nest or 150 ft of a non-breeding roost burrow, implementation of Mitigation Measure 2a, in combination with Measures 2b and 2c if necessary, would reduce impacts to a less-than-significant level.

Note that because of the high level of baseline activity that occurs on the site, these measures do not pertain to the continuation of ongoing activities on the site. If burrowing owls are currently

nesting or roosting on the landfill slopes in close proximity to existing resource recovery activities, they are habituated to those activities. Rather, these measures would be necessary only if activities resulting in greater noise or movement of equipment or personnel are introduced to an area within 250 ft of a burrowing owl nest or 150 ft of a non-breeding roost burrow.

Mitigation Measure 2a. Pre-construction Surveys. Pre-construction surveys for burrowing owls will be conducted in potential habitat in conformance with CDFG protocols, no more than 5 days prior to the start of any Plan-related activities of increased intensity (e.g., human activity or noise) or ground-disturbing activity such as clearing and grubbing, excavation, or grading. If no burrowing owls are located during these surveys, no additional action would be warranted. However, if burrowing owls are located within 250 ft of Plan-related activities, the following mitigation measures will be implemented.

Mitigation Measure 2b. Buffer Zones. If burrowing owls are present during the non-breeding season (generally 1 September to 31 January), a 150-ft buffer zone, within which no new Plan-related activity will be permissible, will be maintained around the occupied burrow(s) if feasible. If a 150-ft buffer is not feasible, then a reduce buffer is acceptable as long as Plan activities will not directly affect the roost burrow or owls. During the breeding season (generally 1 February to 31 August), a 250-ft buffer, within which no new Plan-related activity will be permissible, will be maintained between Plan-related activities and occupied burrows. Owls present at burrows within 250 ft of the Plan site after 1 February will be assumed to be nesting unless evidence indicates otherwise. This protected area will remain in effect until 31 August, or at the CDFG's discretion and based upon monitoring evidence, until the young owls are foraging independently.

Mitigation Measure 2c. Relocation. If ground-disturbing activities will impact occupied burrows within 250 ft of the Plan area, eviction outside the nesting season may be performed in consultation with the CDFG. This is very unlikely to be necessary due to the extent of existing development and disturbance, paucity of ground squirrel burrows, and presence of very tall vegetation within currently undisturbed habitat in proximity to the Plan Area. No burrowing owls will be evicted from burrows during the nesting season (1 February through 31 August) unless evidence indicates that nesting is not actively occurring (e.g., because the owls have not yet begun nesting early in the season, or because young have already fledged late in the season).

Potential Loss of Active Nests of the Alameda Song Sparrow, Bryant's Savannah Sparrow, and San Francisco Common Yellowthroat

Song sparrows, possibly including the Alameda song sparrow, as well as Bryant's savannah sparrows and San Francisco common yellowthroats, are fairly common in dense wetland and ruderal vegetation on the TCRDF. All three species are listed as species of special concern by the CDFG. If Plan-related activities such as vegetation removal, excavation, and grading take place during the breeding season (roughly early March to mid-August for these two species) in areas supporting suitable nesting habitat, the nests, eggs, and/or young of these species could be destroyed. In addition, Plan activities performed in close proximity to active nests could cause disturbance that results in the abandonment of eggs or young. Given the number of individuals of these species present on or immediately adjacent to the site, such destruction or abandonment of nests of these species would constitute a potentially significant impact. We have determined Plan-related impacts to habitat of these three species would be less than significant because of

the current levels of disturbance of the habitat; under current operations, suitable nesting habitat for all three species is present only sporadically, and may be disturbed for resource recovery activities at any time. If current operations have not disturbed suitable nesting habitat for these species prior to the earliest known date of egg laying (at which point the nest becomes an active nest), mitigation measures must be implemented prior to implementation of new Plan-related activities within 50 ft of suitable nesting habitat for Alameda song sparrows, Bryant's savannah sparrows, and San Francisco common yellowthroats. The earliest known start of egg-laying for Alameda song sparrows is 15 February, for Bryant's savannah sparrows is about 1 April and for San Francisco common yellowthroats is 15 March; therefore, mitigation measures must be implemented if suitable nest habitat remains within 50 ft of new Plan-related activities on 15 February. Implementation of one of the following mitigation measures would reduce impacts to breeding Alameda song sparrows, Bryant's savannah sparrows, and San Francisco common yellowthroats to less-than-significant levels.

Note that because of the high level of baseline activity that occurs on the site, these measures do not pertain to the continuation of ongoing activities on the site. If Alameda song sparrows, Bryant's savannah sparrows, or San Francisco common yellowthroats are currently nesting or roosting in close proximity to existing resource recovery activities, they are habituated to those activities. Rather, these measures would be necessary only if breeding habitat will be directly impacted or if activities resulting in greater noise or movement of equipment or personnel are introduced to an area within 50 ft of potential breeding habitat between 15 February and 15 August.

Mitigation Measure 3a. Restrict Plan Activities to the Non-breeding Season. Alameda song sparrows, Bryant's savannah sparrows, and San Francisco common yellowthroats breed from mid-February to mid-August. If Plan activities in close proximity to potential nesting habitat can be scheduled to occur between mid-August and early February, the nesting season would be avoided, and no impacts to nests of these species would occur.

Mitigation Measure 3b. Clear Vegetation during the Non-breeding Season. If Plan activities are to occur between mid-February and mid-August, all vegetation in the areas that are to be disturbed by new Plan-related activities, and that could serve as nesting habitat for these species, should be removed during the non-breeding season (which is approximately mid-August to early February for these three species). In addition, all vegetation that could serve as suitable nesting habitat for these species, and that is located within 50 ft of areas of disturbance, should be removed to prevent the activities from disturbing active nests. During the initiation of any new Plan-related activity, the Plan Area and adjacent areas within 50 ft should be maintained so that no vegetation suitable for nesting by these species is allowed to develop. If vegetation is removed during the non-breeding season prior to Plan implementation, no impacts to nesting would occur.

Mitigation Measure 3c. Conduct Pre-disturbance Surveys and Avoid Disturbance to Active Nests. If new Plan-related activities are to occur during the breeding season in or near potential nesting habitat, a qualified ornithologist should conduct pre-disturbance surveys no more than 5 days prior to the initiation of disturbance in any given area. If active song sparrow, savannah sparrow, or common yellowthroat nests are found to be present within or near (i.e.,

within 50 ft of) the impact areas during the breeding season, a buffer area of 50 ft free from any new or substantially increased Plan-related disturbance should be established around any active nest. This buffer should be respected until nesting has been completed.

CUMULATIVE IMPACTS

Impacts to sensitive resources within the Plan Area will be minimal, as the habitats to be impacted are either heavily disturbed (and disturbed on an ongoing basis) or are less frequently disturbed ruderal habitats that are regionally abundant. Although the Plan will result in the loss of habitat for some species, the majority of these species are also regionally common, the amount of habitat lost is very small compared to regional availability, and much of the impact to habitat (e.g., on the landfill) will be temporary. Furthermore, for more sensitive species (e.g., those associated with wetland habitats), the proposed South Bay Salt Ponds Restoration Project is expected to increase habitat substantially in the coming years. Therefore, the Plan is not expected to contribute to significant cumulative adverse impacts to biological resources.

COMPLIANCE WITH ADDITIONAL LAWS AND REGULATIONS APPLICABLE TO BIOTIC RESOURCES OF THE PLAN AREA

REGULATORY OVERVIEW FOR BIRDS

The Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA; 16 U.S.C., §703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment, a violation of the MBTA.

California State Fish and Game Code

Migratory birds are also protected in California. The State Fish and Game Code §3503 emulates the MBTA and protects birds' nests and eggs from all forms of take. Disturbance that causes nest abandonment resulting in the loss of eggs or young may be considered "take" by the CDFG. Nesting raptors (birds of prey) are specifically protected under CDFG Code §3503.5.

Reuse Plan Applicability

The vast majority of birds found on the Plan Area are protected under the MBTA, and by Fish and Game Code. Plan activities have the potential to take nests, eggs, young or individuals of these protected species. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to the abandonment of nests. Although this impact is not significant under CEQA due to the local and regional abundance of the species in question and the low magnitude of the potential impact, we recommend that the following measures be implemented to reduce the risk of a violation of the MBTA and the California Fish and Game Code.

Compliance Measures

Measure 1. Avoid Construction during the Nesting Season. Grading and other Plan-related activities should be scheduled to avoid the nesting season to the extent possible. The period of January through September encompasses the nesting season for most birds in the Plan Area.

Measure 2. Pre-disturbance Surveys. If construction is to occur during the breeding season, preconstruction surveys should be conducted by a qualified ornithologist no more than 15 days prior to the initiation of construction in any given area. Pre-disturbance surveys should be used to ensure that no nests of species protected by the MBTA or State Code will be disturbed during Plan implementation.

Measure 3. Inhibiting Nesting. If vegetation is to be removed for Plan-related activities and all necessary approvals have been obtained, potential nesting substrate (*e.g.*, bushes, trees, grass, buildings, burrows) that will be removed by the project should be removed during the period October through December (outside the nesting season), to help preclude nesting.

Measure 4. Buffer Zones. If an active nest is found, a qualified ornithologist, in consultation with CDFG, should determine the extent of a construction-free buffer zone to be established around the nest.

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APPENDIX A.
SPECIAL-STATUS PLANT SPECIES CONSIDERED BUT REJECTED
FOR OCCURRENCE IN THE PLAN AREA

Appendix A. Special-status Plant Species Considered but Rejected for Occurrence at the Plan Area.

Scientific Name	Common Name	Lack of Serpentine Soils	Lack of Other Edaphic Requirements	Outside of Known Endemic or Extant Range.	Outside of the Elevation Range	Lack of Associated Species	Highly Degraded Site Conditions
<i>Acanthomintha lanceolata</i>	Santa Clara thorn-mint				X		
<i>Androsace elongata</i> ssp. <i>acuta</i>	California androsace				X		
<i>Arctostaphylos andersonii</i>	Anderson's manzanita		X		X		
<i>Aspidotis carlotta-halliae</i>	Carlotta Hall's lace fern				X		
<i>Astragalus nuttallii</i> var. <i>nuttallii</i>	ocean bluff milk-vetch		X				X
<i>Astragalus tener</i> var. <i>tener</i>	alkali milk-vetch		X				
<i>Atriplex coronata</i> var. <i>coronata</i>	crownscale						X
<i>Atriplex depressa</i>	brittlescale						X
<i>Atriplex joaquiniana</i>	San Joaquin spearscale						X
<i>Atriplex minuscula</i>	lesser saltscale		X		X		X
<i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	big-scale balsamroot				X		
<i>California macrophylla</i>	round-leaved filaree				X		
<i>Calochortus umbellatus</i>	Oakland star-tulip				X		
<i>Campanula exigua</i>	chaparral harebell		X				
<i>Castilleja ambigua</i> ssp. <i>ambigua</i>	johnny-nip						X
<i>Chloropyron maritimum</i> ssp. <i>palustre</i>	Point Reyes bird's-beak			X			X
<i>Chorizanthe robusta</i> var. <i>robusta</i>	robust spineflower		X			X	
<i>Cirsium fontinale</i> var. <i>campylon</i>	Mt. Hamilton fountain thistle				X		
<i>Clarkia breweri</i>	Brewer's clarkia				X		
<i>Clarkia concinna</i> ssp. <i>automixa</i>	Santa Clara red ribbons				X		
<i>Collinsia multicolor</i>	San Francisco collinsia	X	X				
<i>Delphinium gypsophilum</i> ssp. <i>gypsophilum</i>	Delphinium gypsophilum ssp. gypsophilum				X		
<i>Dirca occidentalis</i>	western leatherwood		X		X		
<i>Dudleya abramsii</i> ssp. <i>setchellii</i>	Santa Clara Valley dudleya				X		
<i>Eriogonum nudum</i> var. <i>decurrens</i>	Ben Lomond buckwheat				X		
<i>Eriogonum umbellatum</i> var. <i>bahiiforme</i>	bay buckwheat				X		
<i>Eriophyllum jepsonii</i>	Jepson's woolly sunflower				X		
<i>Eryngium aristulatum</i> var. <i>hooveri</i>	Hoover's button-celery		X				X
<i>Fritillaria agrestis</i>	stinkbells		X				X
<i>Fritillaria liliacea</i>	fragrant fritillary	X	X				
<i>Galium andrewsii</i> ssp. <i>gatense</i>	phlox-leaf serpentine bedstraw				X		
<i>Helianthella castanea</i>	Diablo helianthella				X		
<i>Hesperervax caulescens</i>	hogwallow starfish						X
<i>Hoita strobilina</i>	Loma Prieta hoita				X		

Scientific Name	Common Name	Lack of Serpentine Soils	Lack of Other Edaphic Requirements	Outside of Known Endemic or Extant Range.	Outside of the Elevation Range	Lack of Associated Species	Highly Degraded Site Conditions
<i>Iris longipetala</i>	coast iris		X				X
<i>Lasthenia ferrisiae</i>	Ferris' goldfields		X				X
<i>Leptosiphon acicularis</i>	bristly leptosiphon				X		
<i>Leptosiphon ambiguus</i>	serpentine leptosiphon				X		
<i>Leptosiphon grandiflorus</i>	large-flowered leptosiphon		X				X
<i>Lessingia hololeuca</i>	woolly-headed lessingia	X	X				
<i>Lessingia tenuis</i>	spring lessingia				X		
<i>Malacothamnus arcuatus</i>	arcuate bush-mallow		X		X		
<i>Micropus amphibolus</i>	Mt. Diablo cottonweed		X		X		
<i>Microseris sylvatica</i>	sylvan microseris				X		
<i>Monardella antonina</i> ssp. <i>antonina</i>	San Antonio Hills monardella				X		
<i>Monardella villosa</i> ssp. <i>globosa</i>	robust monardella				X		
<i>Monolopia gracilens</i>	woodland woolythreads				X		
<i>Navarretia cotulifolia</i>	cotula navarretia		X				
<i>Navarretia nigelliformis</i> ssp. <i>nigelliformis</i>	adobe navarretia				X		
<i>Navarretia prostrata</i>	prostrate vernal pool navarretia					X	X
<i>Piperia michaelii</i>	Michael's rein orchid		X				
<i>Plagiobothrys glaber</i>	hairless popcorn-flower					X	X
<i>Psilocarphus brevissimus</i> var. <i>multiflorus</i>	Delta woolly-marbles		X				X
<i>Ranunculus lobbii</i>	Lobb's aquatic buttercup		X				X
<i>Senecio aphanactis</i>	chaparral ragwort		X				X
<i>Streptanthus albidus</i> ssp. <i>albidus</i>	Metcalf Canyon jewel-flower				X		
<i>Streptanthus albidus</i> ssp. <i>peramoenus</i>	most beautiful jewel-flower	X			X		
<i>Stuckenia filiformis</i>	slender-leaved pondweed				X		
<i>Suaeda californica</i>	California seablite			X			X
<i>Tropidocarpum capparideum</i>	caper-fruited tropidocarpum		X				X